

HAZARD ALERT

CPWR
THE CENTER FOR CONSTRUCTION
RESEARCH AND TRAINING

SOLVENTS



What is a Solvent?

Solvents are chemicals used to thin or dissolve paint, grease, epoxies, adhesives, and coatings. There are many different types of solvents. Some are found under their chemical name and some are added to products.

Common chemical names:

- ▶ 1-Bromopropane
- ▶ Acetone
- ▶ Benzene
- ▶ Denatured alcohols
- ▶ Methyl ethyl ketone (MEK)
- ▶ n-Hexane
- ▶ Perchloroethylene
- ▶ Petroleum distillates (naptha, mineral spirits, gasoline, kerosene)
- ▶ Toluene
- ▶ Trichloroethylene
- ▶ Xylene

Common products containing solvents:

- ▶ Adhesives
- ▶ Cleaners
- ▶ Degreasers
- ▶ Epoxies & resins
- ▶ Lubricants
- ▶ Paints & coatings
- ▶ PVC glue
- ▶ Thinners

For more information about chemicals, see NIOSH's Pocket Guide to Chemical Hazards <https://www.cdc.gov/niosh/npg/>

What is the risk?

According to NIOSH, solvents are hazardous to your health when:

- ▶ **Breathed in** – Solvents can evaporate quickly into a vapor. Inhaling the vapor can irritate or burn your nose, throat and lungs. You can smell solvents that have a strong odor, but some have no odor.
- ▶ **Touched** – Solvents can irritate the skin causing dryness and cracks. **Do not wash your hands with a solvent.**
- ▶ **Swallowed** – Solvents that get into your mouth and stomach can irritate or burn your mouth, throat, stomach and intestine. Wash your hands before eating or drinking.

Solvents can get into your bloodstream when they are breathed in, touched or swallowed. Once in your blood, they can travel throughout your body causing serious health effects. In the short term, they can make you feel dizzy, sleepy, nauseous, or give you a headache. Long term exposure to solvents can damage your nervous system, reproductive system, liver, kidneys, respiratory system, and cause cancer.

Solvents are also flammable. If they catch on fire, you can be burned.

Source: The National Institute for Occupational Safety & Health (NIOSH) <https://www.cdc.gov/niosh/topics/organsolv/>

If you think you are in danger:

Contact your supervisor. Contact your union.

Call OSHA 1-800-321-6742

Protect Yourself...

1 Get Training

OSHA* requires employers to train their employees about chemical hazards they will be exposed to on the job, give them safety data sheets (SDS), and label products.

The SDS tells you what chemicals are in a product and how hazardous they are with Category 1 being the most hazardous.

*Source: OSHA's Hazard Communication Standard – 1910.1200 <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200>

2 Prevent exposure

Ask your employer if there is a water-based product that can be used instead. If safer products are not available, a ventilation system should be used near the source to remove solvent vapors before they reach your breathing zone. Fans can help ventilate the area, but they do not remove the hazard.

Use caution when working in a confined space. Your employer is required to provide proper ventilation and to assign a competent person to make sure the space is safe.* Check with the competent person before starting work.

*OSHA's Confined Spaces in Construction: <https://www.osha.gov/confinedspaces/>

3 Wear personal protective equipment

OSHA requires employers to provide and maintain protective equipment for chemical hazards.¹ Wear gloves and respiratory protection for the solvent you are using, as well as long sleeves and eye protection.

Use a NIOSH-approved respirator. Cartridges are color coded. For example, organic vapor cartridges are black and used with organic solvents.² Paper and HEPA respirators DO NOT protect against solvents. OSHA requires employers to provide respirators and have a Respiratory Protection program in place.³

¹ OSHA's Criteria for Personal Protective Equipment Standard – 1926.95

² OSHA's General Respiratory Protection Guidance for Employers and Workers (https://www.osha.gov/dts/shib/respiratory_protection_bulletin_2011.html)

³ OSHA's Respiratory Protection Standard – 1910.134

Learn More:

- ▶ **Regulations:** Occupational Safety and Health Administration (OSHA) – Solvents (<https://tinyurl.com/OSHA-Solvents>)
- ▶ **Organic Solvents Information:** The National Institute for Occupational Safety & Health (NIOSH) (<https://tinyurl.com/NIOSH-Solvents>)
- ▶ **Identify Safer Cleaning Products:** Environmental Protection Agency (<https://cleangredients.org/>)
- ▶ **Respirator and Cartridge Types:** OSHA's General Respiratory Protection Guidance for Employers and Workers (<https://tinyurl.com/OSHA-RespiratorCartridges>)
- ▶ **ChooseHandSafety.org:** A one stop source for information on skin disorders and hand injuries.
- ▶ **Selecting Glove Types for Solvent Use:** Local Hazardous Waste Management in King County, Washington (<https://tinyurl.com/Gloves-4Solvents>)

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8484 Georgia Avenue
Suite 1000
Silver Spring, MD 20910
301-578-8500
www.cpwr.com